



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,808	01/28/2002	Edward J. A. Pope	POPE#6(CIP)3	3730

7590 09/27/2004  
W. Edward Johansen  
11661 San Vicente Boulevard  
Los Angeles, CA 90049

EXAMINER

MOORE, MARGARET G

ART UNIT	PAPER NUMBER
----------	--------------

1712

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/058,808	<b>Applicant(s)</b> POPE ET AL.	
	<b>Examiner</b> Margaret G. Moore	<b>Art Unit</b> 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 7 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 1712

1. Applicants' amendment filed 7/19/04 has been entered. While claim 1 has been cancelled, claim 8 appears to be an essential duplicate of claim 1, as the claims appear to be drawn to the same invention, albeit worded slightly differently. As such claim 8 will be rejected over Uemura et al. for reasons consistent with that noted previously. Claim 7 contains new limitations that were not previously found in claim 1. As such the following new ground for rejection, noted in paragraph 4 below, is necessitated.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Uemura et al.

As noted in the previous office action, Uemura et al. teach carbon fibers wherein the fibers are reacted with a compound and a carbide ceramic layer is formed on the fiber. Column 2, line 13, teaches that HfC is a preferred carbide. The instant claim requires a ceramic fiber comprising hafnium carbide derived from a pre-ceramic polymer. The fiber in Uemura et al. has a ceramic layer and thus can be considered a ceramic fiber. On one hand, the carbon fiber that subsequently becomes the hafnium

carbide containing ceramic fiber is prepared from either a pitch based of polyacrylonitrile based fiber. In this regard the ceramic fiber is derived from a preceramic polymer (both polyacrylonitrile and pitch are pre-ceramic polymers). On the other hand, the term "derived from" is open to any type of derivation and lends little descriptive weight to the claims. As such it appears that the fibers in Uemura et al. anticipate that claimed.

Applicants response indicates that the fiber in Uemura is a carbon fiber on which a ceramic layer is formed. They argue that this is not what is claimed, but the Examiner notes that claim 8 contains open language "comprising" and the ceramic fiber claimed can have additional ingredients or components other than the hafnium carbide. The claimed ceramic fiber embraces fibers having a ceramic coating.

The Examiner does agree that the product by process steps found in claim 7 distinguishes this fiber from that taught in Uemura et al.

5. Claims 7 and 8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hilmas et al.

The Examiner notes that the instant application is a continuation in part of 6,403,750, filed June 3, 1999. The claimed material, however, is not taught or suggested in the body of 6,403,750. As such the effective filing date for the claimed fiber is Jan. 28, 2002. As such Hilmas et al. qualifies as prior art under 35 USC 102(e).

Hilmas et al. teach the preparation of a filament. Particular attention is drawn to the bottom of column 11, in which Example 1 prepares a hafnium carbide matrix. In this preparation, hafnium carbide and various polymers are admixed and heated. This meets instant step a., in which a pre-ceramic polymer that contains hafnium is melted. This composition is then extruded (see the top of column 12). This composition is then subjected to pyrolysis. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.

Hilmas et al. do not specifically teach a step of crosslinking the fiber, but the Examiner notes that this is a product by process type claim and this limitation does not appear to lend any distinction to the final claimed product per se.

Also, while Hilmas et al. do not specifically teach heating at a temperature greater than 600 degrees, instant step d., this step pyrolyzes the fiber. Thus the pyrolyzed fiber in Hilmas et al. appears to be inherently the same as that claimed.

Note also the claims in Hilmas et al. Claim 1 teaches a step of forming a feed of a polymer (i.e. a preceramic polymer) that contains a ceramic material (which claim 7 indicates can be hafnium carbide or hafnium diboride). This is extruded and formed into a filament (i.e. a fiber). The filament is then fired to remove the polymer (see claim 6). In this manner a fiber that appears to be the same as that claimed is prepared.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Margaret G. Moore whose telephone number is 571-272-1090. The examiner can normally be reached on Monday to Wednesday and Friday, 10am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Margaret G. Moore  
Primary Examiner  
Art Unit 1712

mgm  
9/23/04